This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim **1 (Currently Amended).** Monodispersed, spherical zirconia (ZrO_2) particles of approximately 10 to approximately 600 nm, synthesized using a sol-gel technique, are pure and free of foreign oxides and exhibit metastable tetragonal crystal structure at room temperature.

Claim **2 (Original).** The ZrO_2 particles as in claim 1, wherein said particles are approximately 10 to approximately 30 nm.

Claim **3 (Original).** The ZrO_2 particles as in claim 1, wherein said particles are approximately 500 to approximately 600 nm.

Claim **4 (Original).** The ZrO_2 particles as in claim 1, wherein the ZrO_2 particles are approximately 100% in the tetragonal phase at room temperature.

Claim **5 (Original).** The ZrO_2 particles as in claim 2, wherein the ZrO_2 particles are approximately 100% in the tetragonal phase at room temperature.

Claim **6 (Original).** The ZrO_2 particles as in claim 3, wherein the ZrO_2 particles are approximately 100% in the tetragonal phase at room temperature.

Claims **7 – 20 (Cancelled).**

Claim **21 (Currently Amended).** A coating of monodispersed, spherical ZrO_2 particles on a metal substrate, wherein said particles are approximately 10 to approximately 600 nm in size, are synthesized using a sol-gel technique, are pure and free of foreign oxides, exhibit metastable tetragonal crystal structure and are 100% in the tetragonal phase.

Claim **22 (Cancelled).**

Claim **23 (Original).** The coating, as in claim 21, wherein said particles are approximately 10 to approximately 30 nm in size.

Claim **24 (Original).** The coating, as in claim 21, wherein said particles are approximately 500 to approximately 600 nm in size.

Claim **25 (Currently Amended).** Monodispersed, spherical particles of approximately 10 to approximately 600 nm, which exhibit metastable tetragonal crystal structure at room temperature, wherein said particles are synthesized using a sol-gel technique, are approximately 100% in the tetragonal state, and are composed of a ceramic oxide, and being composed of a single, pure oxide, which is free of other foreign oxides.

Claim **26 (Original).** The monodispersed spherical particles, as in claim 25, wherein said ceramic oxide is selected from the group consisting of zirconium oxide, tin oxide, titanium oxide and indium oxide.

Claim **27 (Original).** The monodispersed particles, as in claim 25, wherein said particles are of the size approximately 10 to approximately 30 nm.

Claim **28 (Original).** The monodispersed particles, as in claim 25, wherein said particles are of the size approximately 500 to approximately 600 nm.

Claim **29 (Currently Amended).** A nanocrystalline ZrO_2 powder, comprising:

monodispersed, spherical ZrO_2 particles of approximately 10 to approximately 600 nm, synthesized using a sol-gel technique, that are pure and free of foreign oxides and ~~which~~ exhibit metastable tetragonal crystal structure at room temperature.

Claim **30 (Currently Amended).** The nanocrystalline powder in claim 29 wherein said particles are in the ~~approximateley~~ approximately 100% tetragonal phase~~, and are pure and free of foreign oxides~~.